AT-9424Ts/XP

24 Port 10/100/1000T Managed Layer 3 Switch with 2 10GbE XFP Bays and a Stacking Module Expansion Bay with 48Gbps Stack Backplane

AT-9424Ts/XP

Layer 3 stackable switch with 20 port 10/100/1000T, 4 x 10/100/1000T / SFP combo ports plus 2 XFPs bays (unpopulated) and AT-StackXG module bay

Product Overview

The AT-9424Ts/XP is a Layer 3 Gigabit Ethernet (10/100/1000) switch with built in 10GbE front-side XFP bays for 10Gbps backbone connectivity. It is the ideal 10GbE backbone gateway at the edge and aggregation tiers of the network. It comes in a 1RU form factor and provides rich QoS and IGMP capabilities for voice and video enabled networks.

The relative affordability of the AT-9424Ts/XP makes 10GbE backbones a reality for small to medium enterprises. It offers an extensive set of standards-based features to ensure ease of management and integration into existing networks.

Built-in 10GbE Bays

The AT-9424Ts/XP switch is designed to meet the growing bandwidth needs that advanced applications and connectivity options are requiring of networks. It features two built-in bays for 10 Gigabit Ethernet connectivity to provide an excellent uplink subscription ratio (1.2 to 1 using both bays). No additional module is required to house the XFP transceivers. It provides an extraordinary amount of bandwidth capacity making it an ideal investment for organizations that seek 7 to 10 years of service or more from their switches.

Network QoS and IGMP for Video and Voice-over-IP

A rich offering of voice and video networking features is incorporated to ensure support for demanding multimedia networking applications in the enterprise. Converged networking is enhanced with QoS/CoS including eight priority queues for IEEE 802.1p/ToS/DiffServ traffic.

The high performance hardware platform makes latency a non-issue. The IGMP implementation on the AT-9424Ts/XP is capable of transmitting broadcast quality video throughout the enterprise network.

Network Security

To address the concern of network attacks in the form of *Denial of Service* (DoS), the AT-9424Ts/XP, using Layer 2-4 intelligence, can be deployed to complement WAN firewalls and PC anti-virus protections to further fortify the network against malicious attacks. The AT-9424Ts/XP comes pre-programmed to detect six well known DoS attacks and supports security features such as IEEE 802.1x (port-based Network Access Control) and Radius/ TACACS+.

Long-term Relevance

The AT-9424Ts/XP is the ideal choice for organizations seeking a long-term switching solution. In addition to the extensive Layer 2 feature set this switch features 10GbE support and Layer 3 switching for the future flexibility and the capacity required to meet emerging needs. Optional redundant power supplies are also available to further increase the service life of this switch.

Key Features

10 Gigabit Ethernet Support

- Two integrated XFP bays for 10GbE

Layer 3 Support

- RIPv2
- Static routing
- ECMP

Performance

- Non-blocking, line rate switching for all packet sizes
- Switch fabric 136Gbps
- Stacking bandwidth 48Gbps
- 4K VLANs (static and dynamic)
- 256 static Layer 2 multicast groups
- 255 dynamic Layer 2 multicast groups
- 9K jumbo frame support

Layer 2-4 Intelligence

- Packet inspection and classification at MAC, IP, TCP/UDP layers
- Set QoS, ACL, mirroring, and rate-limiting using traffic classes

Security

- DoS attack protection
- Radius/TACACS+
- Port security
- SSH
- SSL
- IEEE 802.1x
- Access Control Lists

Advanced Services

- Rate limiting (ingress and egress)
- 8 QoS service levels
- IEEE 802.1p for MAC-based QoS
- DSCP for IP-based QoS

Resiliency

- IEEE 802.1s Multiple STP
- IEEE 802.3ad link aggregation
- IEEE 802.1D Spanning-Tree
- IEEE 802.1w Rapid STP
- Temperature threshold alert

Management

- Telnet
- Web GUI
- CLI
- Dedicated management port
- Compact flash slot

AT-9424Ts/XP | 24 Port 10/100/1000T Managed Layer 3 Switch

Hardware Specifications

Physical Characteristics

Dimensions (H x W x D)	4.4cm x 43.8cm x 30.48cm (1.75in x 17.25in x 12in)
Weight	4.23kg (9.4lbs.)

System Capacity

128MB RAM
16MB flash memory
200MHz PowerPC CPU
4096 VLANs
16000 MAC addresses

Performance

Wirespeed switching on all Ethernet ports
14,880pps for 10Mbps Ethernet
148,800pps for 100Mbps Ethernet
1,488,000pps for 1000Mbps Ethernet

Ethernet throughput	101.184Mpps
Switch fabric	136Gbps

Stacking with AT-STACKXG stacking module
up to eight switches
Two 12Gbps full-duplex stacking port per module
Resilient bidirectional ring architecture

Power Characteristics

Voltage:	100-240V AC
Current:	4.0/2.0A
Frequency:	50-60Hz
Max power consumption:	68 Watts

Environmental Specifications

Operating temperature:	0°C to 40°C (32°F to 104°F)
Storage temperature:	-25°C to 70°C (-13°F to 158°F)
Operating humidity:	5% to 90% non-condensing
Storage humidity:	5% to 90% non-condensing
Max operating altitude	3,048m (10,000 ft)

Recommended ventilation on all sides: 10cm (4.0 in.)

MTBF	250,000 hrs.

Electrical/Mechanical Approvals

Safety UL 60950-1, CSA C22.2 No. 60950-1-03,
EN60950-1, EN60825-2 (TUV)
EMI FCC Part 15 Class A, EN55022 Class A, EN55024
Immunity, VCCI Class A, C-TICK, EN61000-3-2,
EN61000-3-3, AS/NZS 3548 (Australia/New Zealand)
Immunity EN55024

Country of Origin

Singapore

Software Specifications

Layer 3 Support

RIPv1
RIPv2
ECMP
Static IPv4 Routing (1024 routes)

Interface Standards

IEEE 802.3	10T and 10FL
IEEE 802.3u	100TX and 100FX
IEEE 802.3z	1000SX
IEEE 802.3ab	1000T
IEEE 802.3ae	10000X

General Standards

IEEE 802.1d	Bridging
IEEE 802.3ac	VLAN tag frame extension
IEEE 802.3x	BackPressure/ flow control

Redundancy

Static and dynamic port trunking (six trunk groups and up to 8 ports per trunk)

IEEE 802.3ad	LACP link aggregation
IEEE 802.1D	Spanning-Tree Protocol
IEEE 802.1w	Rapid Spanning-Tree
IEEE 802.1s	Multiple Spanning-Tree

Router Redundancy Protocol (RRP) snooping
Dual software images, dual configuration files

Traffic Management and Quality of Services (QoS)

Layer 2, 3 and 4 criteria
Flow groups, traffic classes and policies
DSCP replacement
IEEE 802.1Q priority replacement
Type of Service replacement
Type of Service to IEEE 802.1Q priority replacement
802.1Q Priority to Type of Service replacement
Maximum bandwidth control
Burst size control
Ingress rate limiting
Head of line blocking prevention
Support for ingress and egress ports
Eight egress queues per port
IEEE 802.1p Class of Service with Strict and Weighted Round Robin Scheduling

Multicast

RFC 1112	IGMP snooping (v1)
RFC 2236	IGMP snooping (v2)
RFC 3376	IGMP snooping (v3)
RFC 2710	Multicast Listener Discovery (MLD) snooping (v1)
RFC 3810	Multicast Listener Discovery (MLD) snooping (v2)

Management and Monitoring

RFC 1157	SNMPv1
RFC 1901	SNMPv2
RFC 3411	SNMPv3
RFC 1213	MIB-II
RFC 1215	TRAP MIB
RFC 1493	Bridge MIB
RFC 2863	Interfaces group MIB
RFC 1643	Ethernet-like MIB
RFC 1757	RMON 4 groups: Stats, History, Alarms and Events
RFC 2674	IEEE 802.1Q MIB
RFC 1866	HTML
RFC 2068	HTTP
RFC 2616	HTTPS
RFC 854	Telnet server
RFC 1350	TFTP client

Allied Telesis Private MIB

IP address allocation:

RFC 951 / RFC 1542	BOOTP client
RFC 2131	DHCP client manual
RFC 2030	SNTP, Simple Network Time Protocol

Syslog client
Two event logs:
4,000 event capacity in temporary memory
2,000 event capacity in permanent memory

Management Access Methods

Single IP address for management
Out of Band management (serial port)
In-Band management (over the network) using Telnet, Web browser or SNMP

Management Interfaces

Menus
Command line
Web browser
SNMP v1/ v2/ v3

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Security

RFC 1492	TACACS+
RFC 2865	RADIUS client
RFC 2866	RADIUS accounting
IEEE 802.1x	Port-based network access control with multiple supplicants per port ingress and egress Control of broadcast, multicast and unknown unicast traffic

MAC address security/lockdown
Layer 2/3/4/ Access Control Lists (ACLs)
64 ACL profiles
256 rules per ACL profile
ACLs based on:
- Ethernet frame type
- MAC address/VLAN ID/802.1p
- Layer 2/3 Protocol
- IP subnet/address/ToS/DSCP
- UDP/TCP port/flag

SSHv2 for Telnet mgmt
SSLv3 for Web mgmt
DoS attack protection
Smurf
SYN flood
Teardrop
Land
IP option
Ping of Death
SNMP attack

Fault Protection

Bad cable detection
Broadcast storm control

Ordering Information

AT-9424Ts/XP-xx
Layer 3 stackable switch with 24-port 10/100/1000T, 4 x 10/100/1000T / SFP combo ports, plus 2 XFPs bays (unpopulated) and AT-StackXG module bay

Where xx =
10 for US power cord
20 for no power cord
30 for UK power cord
40 for Australian power cord
50 for European power cord

Accessories

Stacking Accessories

AT-StackXG-00
Stacking module for the AT-9448Ts/XP switch. One AT-StackXG/0.5-00 cable included

AT-StackXG/0.5-00
0.5 meter cable for stacking

AT-StackXG/1-00
1 meter cable for stacking

Redundant Power Supply

AT-RPS3204
Chassis for up to 4 redundant power supplies (Chassis includes one power supply and one cable)

AT-PWR3202
Additional 200 W redundant power supply with cable

Small Form Pluggables (SFPs)

AT-SPSX
Multi-mode fiber, GbE SFP, 850nm

AT-SPLX10
Single-mode fiber, 10km, GbE SFP, 1310nm

AT-SPLX40
Single-mode fiber, 40km, GbE SFP, 1310nm

AT-SPLX40/1550
Single-mode fiber, 40km, GbE SFP, 1550nm

AT-SPZX80
Single-mode fiber, 80km, GbE SFP, 1550nm

AT-SPZX80/xxxx
Single-mode fiber, CWDM, 80km GbE SFP

xxxx =
CWDM wavelengths:
1470, 1490, 1510, 1530, 1550, 1570, 1590, 1610

10Gbps Small Form Pluggables (XFPs)

AT-XPSR
Multi-mode fiber, 850 nm

AT-XPLR
Single-mode fiber, 10km, 1310nm

AT-XPER40
Single-mode fiber, 40km, 1550nm

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